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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/603,615	06/26/2000	Hee-Jin Lee	Q59502	3396

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Sughrue Mion Zinn MacPeak & Seas PLLC
2100 Pennsylvania Avenue NW
Washington, DC 20037-3202

EXAMINER

LEE, TIMOTHY L

ART UNIT PAPER NUMBER

2662

DATE MAILED: 07/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/603,615

Applicant(s)

LEE, HEE-JIN

Examiner

Timothy Lee

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-11 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura (US 6,360,287) in view of Lo et al. (US 6,324,178).
3. Regarding claim 1, Kawamura discloses a system, in which a plurality of electronic apparatuses are connected by a bus, such as the 1394 bus, capable of transmitting isochronous packets and asynchronous packets, which perform communications among those electronic apparatuses. Kawamura mentions in the background of the invention that certain types of data have a small amount of data and do not merit being transmitted in isochronous communications. Kawamura provides for a scheme that provides means for transmitting data having a small amount of data in asynchronous communication. See col. 2, lines 3-16. It can be inferred from this statement that packets of "small" lengths are sent asynchronously, and packets of a length that aren't "small" are sent isochronously (transferring data through the channel by isochronous data transfer service when it is determined that the length of the packet is no less than a predetermined length...transferring data by an asynchronous transfer service when it is determined that the length of the packet is less than a predetermined length). Kawamura does not expressly disclose checking the length of the data packet to decide if the packet is "small." Lo et al. discloses determining the length of a data packet and recording this length value in

Art Unit: 2662

memory. See col. 8, lines 28-31. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the length checking taught by Lo et al. in the system of Kawamura to determine if packet exceeding a certain length no longer qualified to be "small."

One would have been motivated to do this because the system of Kawamura could then determine more accurately whether a packet should be transferred over the isochronous or asynchronous method. Currently, the system does it with less precision, and it could be a waste of efficiency to send certain larger packets over the asynchronous method when they could be more efficiently sent over the isochronous method.

4. Regarding claim 5, as mentioned previously, the system of Kawamura is designed to work for the IEEE1394 serial bus. See col. 1, lines 10-19.

5. Regarding claim 2, neither Kawamura nor Lo et al. expressly discloses where the predetermined length is a MTU defined by the TCP/IP protocol. However, it would have been obvious to a person of ordinary skill in the art at the time of the invention to set the "small" amount mentioned in Kawamura to the length defined in the TCP/IP protocol. One would have been motivated to do this because the predetermined length is an arbitrarily chosen number which would make the system more efficient in how to allocate between its isochronous and asynchronous channels. If the designer of the system wants all TCP/IP packets to be sent asynchronously when they are transferred over the 1394 bus, then the length must be set at least as high as the maximum length of one of those packets.

6. Regarding claim 6, as mentioned previously, the system of Kawamura is designed to work for the IEEE1394 serial bus. See col. 1, lines 10-19.

Art Unit: 2662

7. Regarding claim 8, neither Kawamura nor Lo et al. expressly discloses where the length should be $N \times \text{MTU}$, where N is a positive number smaller than 1. However, it would have been obvious to set the predetermined length at such a value. Again, one would have been motivated to do this if it would make the allocations between what is sent isochronously and asynchronously more efficient. The setting of the predetermined length is a matter of design choice and will be set according to what types and how much data the system needs to handle.

8. Regarding claim 10, as mentioned previously, the system of Kawamura is designed to work for the IEEE1394 serial bus. See col. 1, lines 10-19.

9. Regarding claims 3, 4, 7, 9, and 11, neither Kawamura nor Lo et al. expressly discloses where the checking of the length occurs in the control part of the IP 1394 layer and an ARP layer. However, it would have been obvious to a person of ordinary skill in the art at the time of the invention to perform the step of checking for the length of the packet in that control layer in Kawamura. One would have been motivated to do this because performing this step at the data transfer control layer would be better more efficient than having another component of the system perform this step, where this other component would then have to send the information across multiple layers.

10. Regarding claims 18 and 19, neither Kawamura nor Lo et al. expressly discloses reading an entry in the packet to determine whether it should be sent asynchronously before checking its length. However, it would have been obvious to a first check an entry section to see if the packet has indicated whether or not it should be sent asynchronously. One would have been motivated to do this because if the packet contains this information, then there is no need to waste time on checking the length, and the packet can be directly processed by the most efficient method.

Art Unit: 2662

11. Claims 12, 13, 14, 15, 16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura in view of Lo et al, further in view of Han (US 6,351,465).

12. Regarding claims 12 and 13, neither Kawamura nor Lo et al. expressly discloses where sending a packet asynchronously or isochronously depends on measuring the average rate of the MTU's. Han discloses counting a number of packets over a period of time to determine whether or not packet arrivals have achieved a certain rate. If the arrival rate exceeds a certain value, then the system takes an action. See col. 7, lines 9-19. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the packet counting technique taught by Han in the system of Kawamura to decide whether to send a packet isochronously or asynchronously. One would have been motivated to do this for similar reasons as mentioned before—resources should not be wasted in sending data isochronously doesn't need to be sent with regularity. If the data comes less at than some predetermined rate, then it is more efficient for the system to send it asynchronously.

13. Regarding claim 15, as mentioned previously, the system of Kawamura is designed to work for the IEEE1394 serial bus. See col. 1, lines 10-19.

14. Regarding claims 14 and 16, Kawamura, Lo et al, nor Han expressly discloses where the checking of the length occurs in the control part of the IP 1394 layer and an ARP layer. However, it would have been obvious to a person of ordinary skill in the art at the time of the invention to perform the step of checking for the length of the packet in that control layer in Kawamura. One would have been motivated to do this because performing this step at the data transfer control layer would be better more efficient than having another component of the

Art Unit: 2662

system perform this step, where this other component would then have to send the information across multiple layers.

15. Regarding claim 20, Kawamura, Lo et al., nor Han expressly discloses reading an entry in the packet to determine whether it should be sent asynchronously before checking its length. However, it would have been obvious to a first check an entry section to see if the packet has indicated whether or not it should be sent asynchronously. One would have been motivated to do this because if the packet contains this information, then there is no need to waste time on checking the length, and the packet can be directly processed by the most efficient method.

Allowable Subject Matter

16. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

17. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

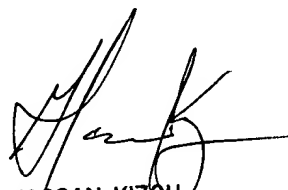
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy Lee whose telephone number is (703)305-7349. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (703)305-4744. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TLL
Timothy Lee
June 23, 2004



HASSAN KIZOU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600